BORISOV, V. I.

Steel - Heat Treatment

Hardening of tools for cold-upset automatic presses. Avt. trakt. prom. No.3, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953. UNCL.

BORISOV, V.I., kandidat tekhnicheskikh nauk.

Increasing the stability of an upsetting tool. Avt.trakt.prom. no.10:25-28 O '54. (MLRA 7:10)

1. Zavod "Krasnaya Etna."
(Machine tools)

BORISOV, V. I.

BORISOV, V. I.: "The principles of constructing photo-typesetting machines and methods of calculating their photo systems." Moscow, 1955. Min Higher Education USSR. Moscow Polygraphics Inst. (Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

BATAKOV, Aleksandr Tikhonovich; BORISOV, Vladimir Ivanovich; ROZENFEL'D, Petr Yakovlevich; CHERNYSHEV, A.N., kand.tekhn. nauk, retsenzent; LAVROV, G.A., inzh., retsenzent; KONOVALOV, G.M., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Printing machinery] Poligraficheskie mashiny. Pod obshchei red. A.T.Batakova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 515 p. (MIRA 12:8)
(Printing machinery and supplies)

BORISOV, V.I.; LEVIT, Z.Yu., inzh.; KALININ, V.Z., inzh.; BROVKIN, M.G., inzh.; AGAL'TSOV, N.V., inzh.; ZHIGACHEVA, T.F., inzh.; LOBANOV, V.S., inzh.; ALIMOV, M.F., inzh.; VIKSMAN, I.M., inzh.; LAZAREV, V.Ya., inzh.; ZALEVSKAYA, L.V., tekhnik; SHCHETVINA, R.F., tekhnik; SOKOLOVSKIY, I.A., red.; SHALAGINOV, A.A., vedushchiy red.

[Special and basic equipment of mechanical assembly shops in instrument plants] Nestandartnoe oborudovanie i orgosnastka mekhanicheskikh sborochnykh tsekhov priborostroitel'nykh zavodov. Moskva, Otdel nauchno-tekhn. informatsii, 1959. 158 p. (MIRA 15:4)

(Instrument industry—Equipment and supplies)

BORISOV, V.I.

Automatic sand conveying. Mashinostroitel' no.5:10-11 My '60. (MIRA 14:5)

1. Glavnyy konstruktor Luganskogo zavoda im. Artema.
(Pneumatic tube transportation)

BORISOV, V.I., inzh.

Using assembly conveyers in manufacturing instruments. Mekh. i avtom.proizv. 14 no.2:22-26 F '60. (MIRA 13:5)
(Instrument industry--Technological innovations)
(Assembly-line methods)

BORISOV, V.I. [Borisov, V.I.]

Mounting belts in the Soviet instrument industry. Musz elet 15 no.7:13 Mr '60. (EEAI 9:7)
(Russia--Machinery industry)

BORISOV, V.I.

Characteristics of the heating of pitch coke oven benches under the conditions of an operation plant. Koks i khim. no.1:34-36 '63.
(MIRA 16:2)

1. Koksokhimstantsiya.
(Coke ovens)

BORISOV, V.I.

Temperature distribution along the heating walls of type GPK-49 pitch coke ovens. Koks i khim. no.8:31-34 '63. (MIRA 16:9)

1. Koksokhimstantsiya.

(Coke ovens)

KUPERMAN, P.I.; GRYAZNOV, N.S.; MOCHALOV, V.V.; FROLOV, V.V.; MUSTAFIN, F.A.; PUSHKASH, I.I.; SLAVGORODSKIY, M.V.; LAZAREV, B.L.; BORISOV, V.I.; Prinimali uchastiye: CHERKASOV, N.Kh.; ZABRODSKIY, M.P.; RYTCHENKO, A.I.; RUTKOVSKAYA, Ye.N.; SAITBURGANOVA, N.I.; SHTAGER, A.A.; SHISHLOVA, T.I.; BUDOL', Z.P.; MEN'SHIKOVA, R.I.; GORELOV, L.A.; AGARKOVA, M.M.; KOUROV, V.Ya.; KOGAN, L.A.; BEZDVERNYY, G.N.; POKROVSKIY, B.I.

Effect of the lengthening of the coking time on the coke quality and testing of coke in the blast furnace process. Koks i khim. no.9: 23-28 '63. (MIRA 16:9)

1. Vostochnyy uglekhimicheskiy institut (for Kuperman, Gryaznov, Mochalov, Kogan, Bezdvernyy, Pokrovskiy). 2. Ural'skiy institut chernykh metallov (for Frolov). 3. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Mustafin, Pushkash, Slavgorodskiy, Lazarev, Cherkasov, Zabrodskiy, Rytchenko, Rutkovskaya, Saitburganova, Shtager, Shishlova, Budol', Men'shikova). 4. Koksokhimstantsiya (for Borisov, Gorelov, Agarkova, Kourov).
(Coke—Testing)

KIRILYUK, Ye.V.; BORISOV, V.I.; KLIMENKO, N.A.; MAROCHEK, Ye.I.

Results of the use of nutrient media from the meat and stomachs of sea animals of the Far East sea basin for the determination of the pathogenicity of diphtheria bacteria. Trudy VladIEMG no.2:247-248 '62. (MIRA 18:3)

1. Iz Vladivostokskogo nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigiyeny; Tikhookeanskogo nauchno-issledovatel'skogo instituta rybnogo khozyaystva i okeanografii i Vladivostokskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

BORISOV, V.I.; PANASEVICH, I.S.; KULAYEV, A.N.

Characteristics of the wear of self-sharpening plowshares. Trakt. i sel'khozmash. no.3:16-17 Mr '65. (MIRA 18:5)

1. Gor'kovskiy sel'skokhozyaystvennyy institut.

KOZLOV, V.A.; PRISTAY, Ya.P.; BORISOV, V.K.

Differences of hematological changes in acute forms of appendicitis in years of maximal and minimal solar activity. Nek. vop. klin. i kraev. pat. no.3:41-45 '63. (MIRA 18:10)

AUTHORS: Borisov, V. L., Lepeshinskaya, V. N. 48-22-5-9/22

TITLE: The Secondary Emission Properties of the Magnesium- and Beryllium-Alloy Emitters After Short Activation (Vtorichno-emissionnyye svoystva magniyevykh i berilliyevykh splavnykh emitterov posle kratkovremennoy aktivirovki)(Data From the VIIIth All-Union Conference on Cathode Electronics, Leningrad, October 17-24, 1957) (Materialy VIII Vsesoyuznogo soveshchaniya po katodnoy elektronike, Leningrad, 17-24 oktyabrya 1957 g.)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958 Vol. 22, Nr 5, pp. 534-545 (USSR)

ABSTRACT: Because of the high values of the coefficient of the secondary electron emission of the mentioned alloys they more and more are used in photoelectronic multipliers and in electric valves with a secondary emission. A bibliography (Refs 1-9) on their production and properties is given. The activated samples must be in a position to stand a long exposure to air and must recover their properties after an easy and simple reactivation. In this work investigations of the secondary emission properties of emitters are discussed, which were activated under conditions meeting the enumerated requirements. It was: Cu-Al-Mg (93,6, 1%), Cu-Si-Mg, Cu.Al.Be (97,5, 0,5, 2%) and Cu-Be(98,2%). This select-

Card 1/3

The Secondary Emission Properties of the Magnesium- and Beryllium-Alloy Emitters After Short Activation. (Data From the VIIIth All--Union Conference on Cathode Electronics, Leningrad, October 17-24, 1957) 48-22-5-8/22

ion was dictated by practical demands. The authors came to the following conclusions: 1) The activation method, worked out by them of several alloyed emitters reduces the duration of working to from 8-10 minutes. The special oxidizing environment can here be omitted, as the whole process takes place in the "residual gases" of the apparatus. The highest attainable coefficient of the secondary electron emission δ is equal to 9-13; at V_p = 100 V δ = 3,2-3,6 for Cu-Mg-alloys and 3,5-4,0 for Cu-Be-alloys. Also for the reactivation of the Cu-Mg-emitters that have become weaker in the air, the described method gives a relatively simple possibility. The temperature coefficient has proved to be negative and equal to from -0,02 to 0,03% per degree. The character of the $\delta(V_p)$-curves was investigated, finally the functions were ascertained of the secondary current dependent on the collector potential and the distribution curves of the secondary electrons according to the energies for all examined alloys. N. N. Khristoforov and T. A. Kuz'mina took part in the work. In the discussion on the abstract I. M. Bronshteyn, A. I. Pyatnitskiy, D. B. Diatropov, V. A. Astrin, N. A. Yasnopol'skiy,

Card 2/3

The Secondary Emission Properties of the Magnesium- and Beryllium-Alloy Emitters After Short Activation. (Data From the VIIIth All-Union Conference on Cathode Electronics, Leningrad, October 17-24, 1957) 48-22-5-8/22

Yaskovskaya, G. S. Vil'dgrube, I. N. Dobretsov, N. K. Danilenko, V. M. Lovtsov and the first author participated.
There are 11 figures, 1 table, and 14 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad, Polytechnical Institute imeni M. I. Kalinin)

1. Secondary emitters--Properties 2. Secondary emitters--Performance 3. Secondary emitters--Applications 4. Magnesium alloys--Effectiveness 5. Beryllium alloys--Effectiveness

Card 3/3

9.3120 (1003, 1137, 1140)

21033

S/058/61/000/005/037/050
A001/A101

AUTHORS: Lepeshinskaya, V.N., Borisov, V.L., Zakrevskiy, V.A.

TITLE: The dependence of the coefficient of secondary electron emission on the incidence angle of primary electrons

PERIODICAL: Referativnyy zhurnal. Fizika, no. 5, 1961, 323, abstract 5Zh15 ("Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t", 1960, no 3, 79 - 83)

TEXT: The authors derived the expression for the coefficient of secondary electron emission σ depending on the incidence angle of primary electrons φ under the following assumptions: 1) the path of primary electrons in a solid is rectilinear; 2) the number of excited electrons is proportional to the energy lost by the primary electron; 3) the relation between the range of the primary electron in a solid and its energy is linear; 4) distribution of secondary electrons in the spot of their origination is isotropic; 5) secondary electrons in a solid do not suffer scattering; 6) absorption of secondary electrons proceeds according to an exponential law; 7) probability of escape of the secondary electron which

Card 1/2

The dependence of the coefficient ... S/058/61/000/005/037/050
A001/A101

reached the surface does not depend on its energy. The course of the theoretical curve $\sigma(\varphi)$ agrees satisfactorily with the course of the experimental relation for alloy CuBe plotted according to data of H. Salow ("Phys. Z.", 1940, v 41, 434). There are 18 references.

[Abstracter's note: Complete translation.]

Card 2/2

21586

9.3120 (1003, 1137, 1140)
26.2340

S/109/60/005/010/009/031
E033/E415

AUTHORS: Lepeshinskaya, V.N., Borisov, V.L. and Perchanok, T.M.

TITLE: Secondary-Emission Characteristics of Effective Emitters on an Alloy Base Over a Wide Range of Primary Electron Energies

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1636-1642

TEXT: This paper was presented at the 9th All-Union Conference on Cathode Electronics, Moscow, October 1959.

The processes of diffusion and oxidation occurring during the formation of effective emitters on CuAlMg and CuBe alloys are examined, mainly on the basis of existing literature, to obtain a rational selection of activation conditions. Then the article gives the statistical results of measuring the secondary electron emission coefficient σ and the coefficient of non-elastic electron reflection η in the medium-energy (200 to 2000 ev) and high-energy (2 to 30 kev) primary-electron energy ranges. Non-elastic reflection electrons are those with energies exceeding

Card 1/4

Secondary-Emission ...

50 ev. Graphs of $\sigma(E_p)$ and $\eta(E_p)$ (E_p being the primary electron energy) are plotted. With medium-energy primary electrons σ_{max} varies from 10 to 15 and occurs in the region of 600 to 1000 ev. The value of η is approximately constant at 15 to 16% for MgO film and at 12 to 13% for BeO film, formed on the corresponding alloys. Curves are also given for the region E_p = 0.5 to 30 kev. Then σ for normally activated CuAlMg alloy has a maximum in the region E_p = 1.3 kev after which it falls sharply. η is approximately constant up to 2.5 kev and then it increases to approximately 30% with increase of E_p. When $E_p = E_p^{\max}$ (about 20 kev) η has its value for the base material. Thus the thickness of the activated film can be estimated from the $\eta(E_p)$ curve and the values obtained (400 to 700 Å) coincide approximately with those obtained by calculations based on the activation conditions. The curves $\sigma(E_p)$ and $\eta(E_p)$ were obtained for samples having four different film thicknesses (obtained by activation times of 1, 10, 20 and 60 min) and the lower limit to the effective depth of the output of slow secondary electrons was obtained. For MgO it was approximately 500 Å. Finally, it was found that the energy spectrum of the

Secondary-Emission

secondary electrons does not depend on the value of E_p in the range 1 to 16 kev. The results are summarized in the table which compares the calculated thicknesses of the MgO film based on CuAlMg (93% Cu, 6% Al, 1% Mg) for different activation times. The activation temperature was 600°C, the CO_2 pressure was 0.1 mm Hg. Acknowledgments are expressed to G.B.Stuchinskiy for his assistance. There are 4 figures, 1 table and 15 references: 6 Soviet and 9 non-Soviet.

SUBMITTED: December 21, 1959

S/109/60/005/010/009/031
E033/E415

Secondary-Emission ...

(1) Время активирования, мин	(2) Толщина слоя MgO, Å (3) рассчитанная по (4) диффузии	(5) окислению	(6) данным η	(7) $\sigma_{макс}$	(8) $E_{рмакс.}$ эв	(9) E^{*}_{p}, кэв
1	180	—	225	10,2	700	1,3
3	310	180	300	11,3	800	1,6
5	400	300	350	12,1	900	1,8
10	560	600	490	13,1	1000	2,3
15	690	900	820	13,0	1100	3,4
20	800	1200	—	12,5	1300	—
60	1380	—	1300	8,5	1300	4,3

1 - Activation time (min). 2 - Thickness of the MgO layer Å.
3 - calculated by. 4 - diffusion. 5 - oxidation. 6 - η.
7 - σ_{max}. 8 - $E_{p\,max}$ ev. 9 - E^{*}_{p} kev.

Card 4/4

9.3120 (1003, 1137, 1140)
26.2340

S/109/60/005/010/010/031
E033/E415

AUTHORS: Borisov, V.L., Perchanok, T.M. and Lepeshinskaya, V.N.

TITLE: Angular and Temperature Dependences of the Secondary Emission Coefficient σ and of the Coefficient of Non-Elastic Electron Reflection η of Activated Alloy-Type Emitters

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1643-1649

TEXT: This paper was presented at the 9th All-Union Conference on Cathode Electronics, Moscow, October 1959.

The use of alloy-type emitters in "dynode" particle multipliers demands information on the physical processes occurring in such emitters in different temperature ranges, in particular in the range -60 to -70°C. This information is partly obtainable by investigation of the manner in which the secondary-emission coefficient σ and the non-elastic reflection coefficient η depend on temperature and on the angle of incidence φ of the primary electrons. The article is in three sections, viz investigation of (1) the temperature dependence of σ; (2) dependence of σ and η on the angle of incidence of the

Angular and Temperature ...

primary electrons; (3) the "outflight" angular distribution of secondary electrons. In the first section, after a description of the apparatus and the method of investigation, the results are shown graphically by a series of curves of $\sigma(V_p)$ (V_p is the primary electron voltage) for temperatures T = -70, 20, 200, 300°C. For comparison, a graph of σ_T/σ_{20}, calculated according to Dekker's theory (Ref.1), is also given. With increase of temperature, σ decreases over the whole range of V_p but the change is smaller in the region of low primary-electron energies. The experimental results support Dekker's theory and consequently justify his assumptions that interaction of slow electrons with the dielectric lattice plays a fundamental role in the energy loss of these electrons, and that there is in fact a film of MgO on the surface of the activated CuAlMg alloy. In the second section, the apparatus is briefly described. Activated alloys of CuAlMg and CuBe at 350 and 450°C respectively at the instant the measurements were taken were investigated. Three groups of emitters were studied: (1) CuAlMg with a thick layer of MgO with a rough surface finish. (2) CuAlMg and CuBe with thin layers of

Angular and Temperature ...

MgO and BeO with a rough surface; (3) CuBe with a mechanically polished surface. The results are presented graphically by plotting $\sigma_\varphi/\sigma_o = f(\varphi)$ for different values of primary electron energies (V_p = 400, 800, 1200, 1500 and 2000 V). For all three groups the following conclusions were drawn: σ_φ/σ_o is large with large values of φ; σ_φ/σ_o increases with increase of V_p; σ_φ/σ_o is independent of angle for V_p less than 200 V. The degree of dependence on φ is greatly affected by the surface finish. η/η_o increases with φ and also with the energy of the primary electrons. The angular dependence $\sigma(\varphi)$ is explained on the basis of the simultaneous action of three factors: (1) change in the conditions of formation of secondary electrons as the angle of incidence of the primary-electron beam is altered, (2) the angular dependence of η, (3) the micro-finish of the surface. In the third section, the apparatus for investigation of the angular distribution of secondary electrons is described and illustrated. The polar diagrams (for T = 400°C) for activated CuAlMg are produced. The polar diagrams show the distribution of secondary electrons and the distribution of reflected electrons for normal incidence and for 20° angle of

incidence. The diagrams relate to V_p = 500 V but the same general shape holds for from 50 to 500 V. The distribution conforms to a cosine law. Finally, the maximum of the energy distribution of the secondary electrons does not depend on the angle of incidence. This confirms the work of Gornyy (Ref.12) but is in opposition to the results obtained by Frumin and Kushnir (Ref.11). Acknowledgments are expressed to V.A.Zakrevskiy, G.V.Lomakin and G.N.Chizhukhin who participated in this work. There are 6 figures and 12 references: 9 Soviet and 3 non-Soviet.

SUBMITTED: December 21, 1959

BORISOV, V.L., inzh.

Steam-jet compressor for the utilization of heat of the labyrinth turbine steam. Bum.prom. 35 no.7:20-21 Je '60. (MIRA 13:8)

1. Balakhininskiy tsellyulozno-bumazhnyy kombinat.
(Compressors) (Waste heat)

33366
S/181/62/004/001/042/052
B111/B104

9.4130 (1138, 2605, 1140)

AUTHORS: Alekseyev, V. A., and Borisov, V. L.

TITLE: Angular distribution of secondary electrons for an MgO power emitter on the basis of a Cu - Al - Mg alloy

PERIODICAL: Fizika tverdogo tela, v. 4, no. 1, 1962, 265 - 271

TEXT: The angular distribution of groups of true secondary electrons and of groups of elastically and inelastically reflected electrons was studied for incident electron energies E_p = 150,400 and 800 ev, and for angles of incidence ranging from 0 to 30°. The measuring arrangement included two concentric, evacuated copper spheres with parallel slits. The sample, which had the same potential as the internal sphere, was located at the center. The secondary electrons traversed the slits and incided on a movable collector. The electron current was statically measured with an electrometer. If several retarding potentials are applied in the interior, one obtains the angular distribution for different electron energies. The angular distribution was measured for angles of incidence ranging from

Angular distribution of ...

0 - 30° at primary electron energies of 150, 400, and 800 ev. The secondary electron current, recorded by a beam catcher, lay between 10^{-11} and 10^{-12} a. Volt-ampere characteristics for different angles of emission are presented along with four rather similar polar diagrams of the angular distribution of true secondary electrons as a function of the primary electron energy, of the temperature, and of the degree of activation. In general, certain maxima appear at low temperatures which are independent of the primary electron energy (N. B. Gornyy, ZhETF, 31, 3(9), 1956) and vanish at higher temperatures. The curves can then be approximated with cosine functions. Of particular importance to the collisions of secondaries with the lattice is the fact that the temperature dependence of the emission coefficient for secondary electrons is consistent with A. Dekker's theory (Ref. 5, see below). Summing up: (1) At 400°C the angular distribution of true secondary electrons can be approximated with a cosine law. It is virtually independent of the angle of incidence, and depends only slightly on E_p and on the degree of activation; (2) the angular distribution of elastically and inelastically reflected electrons

Card 2/3

Angular distribution of ...

can be represented by a prolate line, the greatest diameter of which coincides with the direction of incidence. The prolate line sharpens ever more with increasing E_p; (3) the maxima of slow secondaries for the various angles do not vary with varying energy. Docent V. N. Lepeshinskaya is thanked for placing her laboratory at the authors' disposal. There are 6 figures and 8 references: 3 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: J. L. H. Jonker, Phil. Res. Rep., 8, no. 6, 434, 1953; A. Dekker, Phys. Rev., 94, 1179, 1954; J. Burns, Phys. Rev., 119, no. 1, 102, 1960; J. L. H. Jonker, Phil. Res. Rep., 12, 249, 1957.

SUBMITTED: June 14, 1961 (initially)
September 6, 1961 (after revision)

Card 3/3

39984

S/181/62/004/008/029/041
B108/B102

9,3120

AUTHOR: Borisov, V. L.

TITLE: Secondary electron emission from magnesium oxide

PERIODICAL: Fizika tverdogo tela, v. 4, no. 8, 1962, 2253 - 2257

TEXT: Secondary electron emission from thick magnesium oxide layers upon W or Ta was studied at room temperature in vacuo with a pulse method at primary electron energies of 2 - 2000 ev. A common denominator characterizing the effect of various thermal treatments upon the coefficient σ of secondary electron emission could not be found. The changes in σ cannot be related directly to changes in volume electrical conductivity. Such a relationship, if there is any at all, will be masked by stronger factors. The surface condition, in particular the work function, of the specimens has a strong and possibly lawful effect upon σ. σ decreases with increasing work function. There are 6 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin).

Card 1/2

S/181/62/004/008/029/041
B108/B102

Secondary electron emission ...

SUBMITTED: February, 12, 1962 (initially), February 12, 1962 (initially)
April 20, 1962 (after revision)

Card 2/2

BORISOV, V.L.

Effect of the backing material on the secondary emission from MgO films. Fiz.tver.tela 4 no.10:2738-2740 O '62. (MIRA 15:12)

1. Leningradskiy politekhnicheskiy institut imeni M.I.Kalinina.
(Secondary electron emission)
(Magnesia)

L 15780-63 EWT(l)/EWG(k)/EWP(q)/EWT(m)/BDS/EEC(b)-2/ES(w)-2
AFFTC/ASD/ESD-3/SSD Pab-4/Pz-4 JD/AT/JG

ACCESSION NR: AP3006467 S/0109/63/008/009/1626/1629

AUTHOR: Borisov, V. L.; Khly*stov, V. D.

TITLE: Secondary electron emission of MgO films at low electron energies

SOURCE: Radiotekhnika i elektronika, v. 8, no. 9, 1963, 1626-1629

TOPIC TAGS: secondary electron emission, electron emission, magnesium oxide secondary emission, magnesium oxide

ABSTRACT: The dependence of the coefficient of secondary electron emission (σ), the coefficient of electron elastic reflection (R), and the coefficient of slow-electron emission (δ) on the energy of primary electrons in the 2—30-v range has been investigated for MgO films. Fig. 1 of the Enclosure is a diagram of the device used for the preparation and investigation of the films. The films were produced by depositing Mg containing not more than 0.001% Fe and Cu on a tungsten substrate (a disk 15—20 mm in diameter) at a residual gas pressure of 5×10^{-6} mm Hg, followed by oxidation in an oxygen atmosphere at a pressure of approximately 10^{-1} mm Hg and a temperature of approximately 500C. The duration

Card 1/4 2

L 15780-6

ACCESSION NR: AP3006467

of the oxidation process was 1—2 hr, depending on film thickness; the latter did not exceed 1000 Å. The test device consisted of electron gun EG and target T, which could be adjusted by means of an external magnet. In its left position, the target occupied the center of the collector and in its right position was located in front of spiral-shaped tungsten sprayer S, which could be moved along a line perpendicular to the axis of the device. The analysis of secondary electrons was carried out under conditions of periodic pulses whose repetition rate was about 10 pulses/min. Fig. 2 shows the dependence of σ, R, and δ on primary electron energy. The investigation showed that the value of the first critical potential varies within 13 to 20 v and depends on film thickness and that secondary electrons start to occur in noticeable quantities at an energy corresponding to the width of the forbidden zone. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 30Jul62 DATE ACQ: 30Sep63 ENCL: 02

SUB CODE: GE NO REF SOV: 006 OTHER: 007

Card 2/2

BORISOV, V.L.; KHLYSTOV, V.D.

Secondary electron emission of MgO films at small energies of electrons. Radiotekh. i elektron. 8 no.9:1626-1629 S '63. (MIRA 16:9)

(Magnesium oxides—Electric properties)
(Secondary electron emission)

BORISOV, Vl., inzh.

Setting the standards for geometric parameters of reductors.
Mashinostroene 11 no.12:22-24 D '62.

1. MASHPROEKT.

S/181/62/004/010/014/063
B108/B104

9.3120
24 7600

AUTHOR: Borisov, V. L.

TITLE: Effect of the backing material on the secondary emission of MgO films

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2738 - 2740

TEXT: The object of this study was to gain information on how the elastic and inelastic scattering of primary electrons on a backing affects the emissive properties of thin MgO layers (100 - 750 Å). Tungsten and graphite were chosen as backing since these materials have very different coefficients of inelastic electron scattering. The measurements were made with a pulsed electron beam in a highly evacuated secondary-emission assembly with an antidynatron grid. σ_{max} for MgO on a tungsten backing was about 1.5 times higher than σ_{max} for MgO on a graphite backing. The number of slow secondary electrons ($\sim$ 1.0 ev) produced by reflection from a tungsten backing increases with increasing V_p, i.e., with increasing energy of the primary electrons. For $V_p < 2$ kv, the thick MgO layers would exhibit a

Card 1/2

Effect of the backing...

lower secondary emission. This can be explained by the lower number of electrons inelastically reflected from the backing as the thickness of the MgO layer increases. There are 3 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: May 8, 1962

BORISOV, Vasiliy Matveyevich; NIKITIN, L.I., red.; SOKOL'SKAYA, Zh.M., red. izd-va; SHITS, V.P., tekhn.red.

[Organization of fire prevention in the lumber industry] Organizatsiia protivopozharnoi bezopasnosti v lesnoi promyshlennosti. Moskva, Goslesbumizdat, 1957. 134 p. (MIRA 11:4)
(Lumbering--Fires and fire prevention)

BORISOV, V. M.

3

Hydrocyclone. V. M. Borisov, I. Z. Margolin, and A. I. Anesiov. U.S.S.R. 106,747, July 25, 1957. A cyclone for wet classification comprises conical and cylindrical parts with a disk-shaped diaphragm instilled above them. The diaphragm is provided with a changeable axial tube. A 2nd diaphragm having a coaxial changeable tube is installed between the diaphragm and an overflow cylinder. The 2 diaphragms delineate a water-filled chamber where solid particles thrown out by centrifugal forces of the ascending stream are collected. M. Hoseh

SHESTOPALOVA, N.M.; REYNGOL'D, V.N.; BORISOV, V.M.

Submicroscopic structure of the needlelike crystals of epithelial cells of the intestinal mucous membrane and their place in the endoplasmatic reticulum system. Dokl. AN SSSR 153 no.2:454-456 N '63. (MIRA 16:12)

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR. Predstavleno akademikom A.N.Bakulevym.

L 11134-66 EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(1)

ACC NR: AP6002616 SOURCE CODE: UR/0258/65/005/006/1028/1034

55

AUTHOR: Borisov, V. M. (Moscow)

56

ORG: none

TITLE: On a family of minimum-drag bodies

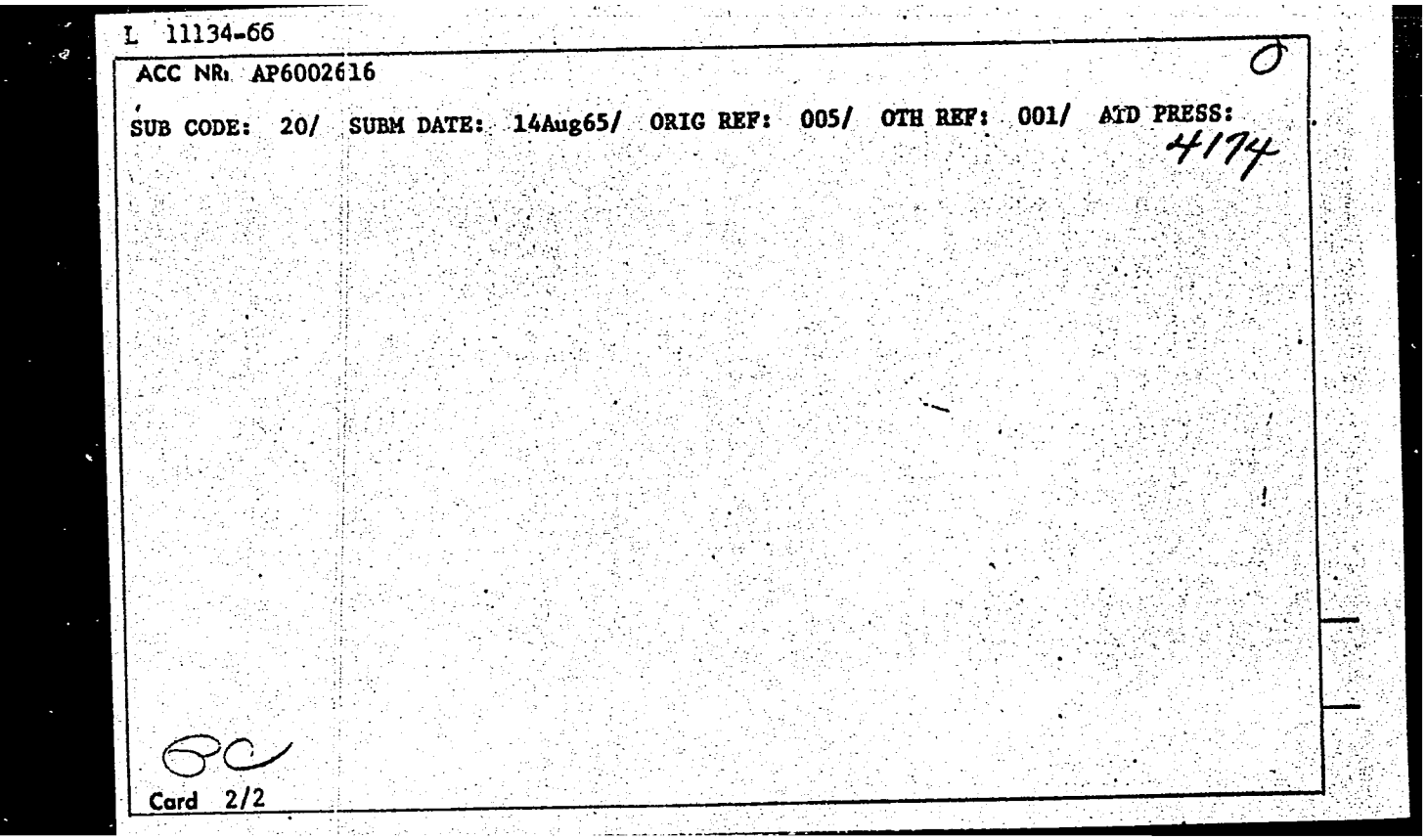
SOURCE: Inzhenernyy zhurnal, v. 5, no. 6, 1965, 1028-1034

TOPIC TAGS: supersonic aerodynamics, inviscid flow, isentropic flow, variational problem, viscous flow, Cauchy problem

ABSTRACT: Two variational problems of determining the optimum configuration of axially symmetric minimum-drag bodies are considered. The analysis is based on the exact equations of a steady isentropic flow of a viscous non-heat-conducting gas. The differential equations of flow are considered as supplementary relations taken into account by introducing Lagrange multipliers. The first problem consists in determining the surface formed by a generatrix passing through three given points. In the second problem, the surface is formed by two generatrices passing through two pairs of given points (channel flow). The problems are formulated in the form proposed by K. G. Guderley and I. V. Armitage in 1962. Solutions of the Cauchy and Goursat problems were used to obtain a basis for the construction of optimum profiles. Axisymmetric optimum profiles were constructed for M = 1.5 as an illustrative example. The author thanks Yu. D. Shmyglevskiy and A. V. Shipilin for their constant interest. Orig. art. has: 6 figures and 18 formulas. [AB]

UDC: 533.6.011.5

Card 1/1



L 11134-66

ACC NR: AP6002616

SUB CODE: 20/ SUBM DATE: 14Aug65/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS: 4174

EC

Card 2/2

USSR/Chemistry - Arsenic Compounds Nov 52

238T21

"Concerning Certain Physicochemical Properties of Arsenous Oxide," V. M. Borisov and M. G. Gorshteyn, State Inst of Mineral-Chem Raw Materials

"Zhur Obshch Khim" Vol 22, No 11, pp 1903-1906

On the basis of known data concerning the physicochem properties of arsenous oxide, the structures of different forms of arsenous oxide were examined more carefully. It was established that melting of the octahedral form of As_2O_3 proceeds polythermally.

238M21

The crystals of this form began to melt at 270°C, and melted completely between 290°-295°C. The stable form of arsenous oxide, up to its mp, is its octahedral form.

238M21

BORISOV V. M.

BORISOV, V. M.

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
General and Physical Chemistry

Physical-chemical properties of arsenic trioxide. V. M. Borisov and M. G. Gorshtein. *Chem. Tech.* (Berlin) 5, 319-20(1953).—See C.A. 47, 3074f. S. K. T.

7-27-54

Borisov, V. M.

FD-870

USSR/Chemistry - Flotation

Card 1/1 Pub.50 - 3/24

Author : Borisov, V. M.

Title : A method for the physicochemical evaluation of the interaction of reagents with the surface of mineral grains in flotation

Periodical : Khim. prom., No 6, 336-338 (16-18), Sep 1954

Abstract : Proposes measurement of the electrokinetic potential as a method of evaluating the interaction of reagents with mineral grains in the flotation of mined raw materials other than metal ores. Describes details of the method and results of the research on which the method is based. Ten references, all USSR, all since 1940. Three graphs, five tables.

Institution : State Scientific Research Institute of Mined Chemical Raw Materials, Ministry of Chemical Industry

Submitted :

BORISOV, V. M.

USSR/ Minerals - Chemical technology

Card 1/1 Pub. 22 - 24/40

Authors : Borisov, V.M.

Title : Electrokinetic characteristics of surfaces of minerals and their effect on the floatability of the latter

Periodical : Dok. AN SSSR 99/3, 427-430, Nov 21, 1954

Abstract : The role of the zeta-potential of the surface of mineral grains, during floatation cleavage of the latter, is discussed. The value of the zeta-potential on the surface of pure mono-mineral powders was estimated by means of electroösmosis. The positive sign of the zeta-potential indicates a predominance of cations and the negative sign - predominance of anions on the surface of the given mineral. The zero-value of the zeta-potential shows equilibrium between cations and anions on the surface of the mineral. The floatation activity of the surface increases when the surface charge approaches the isoelectric point. Six USSR references (1930-1953). Tables; graphs.

Institution : State Scientific Research Institute of Mineral-Chemical Raw Material

Presented by : Academician S.I. Vol'fkovich, July 17, 1954

BORISOV, V. M.
USSR/Chemistry - Flotation FD-2526

Card 1/1 Pub. 50 - 5/14

Author : Borisov, V. M.

Title : The effects of caustic alkali and soda on the flotation properties of non-sulfidic minerals

Periodical : Khim. prom. No 4, 213-217, Jun 1955

Abstract : Measured for various minerals the dependence between the electrokinetic potential and flotation capacity as affected by additions of caustic alkali and soda. Nine references; 8 USSR, 5 since 1940. Eight graphs, 4 tables.

Conditions for the beneficiation of the difficult-to-enrich phosphatite ores of the Kara-Tau deposit. V. M. Borisov. *Khim. Prom.* 1956, 13-19.--The phosphatite in the important Kara-Tau Mountain deposit is intimately intergrown with dolomite and chalcedony, and their sepn. by flotation is difficult. By testing the selective adsorption of Na oleate upon apatite, phosphorite, and dolomite, a difference was observed caused by the presence of free H_3PO_4 in the soln. At a 1000 mg. H_3PO_4 (calcd. as P_2O_5) of the soln., the H ions upon the phosphate rocks prevented entirely the oleate ion adsorption. Measurements of electrokinetic (or ζ) potential will give information on the selectivity, and on the reagent consumption in the dolomite flotation, and has been successfully used in the flotation beneficiation of the ore. M. Sternberg

1. Gosudarstvennyy Institut gornokhimicheskogo Syr'ya.

(Phosphorites)

BORISOV, V.M., kandidat tekhnicheskikh nauk; AFANAS'YEV, N.A., kandidat tekhnicheskikh nauk.

Development of the potassium industry. Khim.nauka i prom. 1 no.2:146-149 '56. (MLRA 9:9)

(Potash industry)

BORISOV, V.M.

BORISOV, V.M.

Electrokinetic phenomena accompanying the interaction of chemical collectors with minerals during flotation. Khim.prom. no.5:284-287 Jl-Ag '57. (MIRA 10:12)

1.Gosudarstvennyy institut gornokhimicheskogo syr'ya.
(Flotation)

BORISOV, V. M., Doc of Tech Sci -- (diss) "Physico-chemical Basis and New Flotation Methods of the Production of Elementary Brimstone," Moscow, 1959, 39 pp (Institute of Mining, Acad Sci USSR) (KL, 2-60,112)

SOKOLOV, A.S.; MENKOVSKIY, M.A.; BORISOV, V.M.; SERGEYEVA, N.A., red. izd-va; IYERUSALIMSKAYA, Ye.S., tekhn. red.

[Industry's requirements as to quality of mineral raw materials] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr. No.47. [Native sulfur] Samorodnaia sera. Nauchn. red. V.M.Borisov. 1961. 42 p. (MIRA 14:11)

1. Moscow. Vsesoyuznyy nauchno-issledovatel8skiy institut mineral'nogo syr'ya.

(Sulfur)

BLOKHIN, Konstantin Agapovich; PASHININ, Sergey Afanas'yevich; CHLENOV, M.T., kand. tekhn. nauk, retsenzent; MALICHAYEV, V.M., inzh., retsenzent; BORISOV, V.M., inzh., retsenzent; MELENETS, V.V., inzh., retsenzent; SERGEYEVA, A.I., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Track overhauling operations]Kapital'nye putevye raboty. Moskva, Transzheldorizdat, 1962. 326 p. (MIRA 15:12)
(Railroads—Maintenance and repair)

BORISOV, Vladimir Mikhaylovich, stalevar; GRUBNIK, P.D., red.; LIMANOVA, M.I., tekhn. red.

[A matter of worker's honor] Delo rabochei chesti. Khar'kov, Khar'kovskoe knizhnoe izd-vo, 1962. 19 p. (MIRA 16:6)

1. Khar'kovskiy traktornyy zavod im. Ordzhonikidze, rukovoditel' brigady kommunisticheskogo truda im. XXII s"ezda KPSS (for Borisov).

(Kharkov—Tractor industry)
(Efficiency, Industrial)

BORISOV, V.M., doktor tekhnicheskikh nauk; AFANAS'YEV, N.A., kand.tekhn.nauk

Problems of raw materials for the basic chemical industry. Zhur. VKHO 7 no.1:10-17 '62. (MIRA 15:3)
(Chemical industries) (Raw materials)

BORISOV, V.M.; GOLGER, Yu.Ya.

Measurement of the thermodynamic and absorption potentials of dielectric minerals in studying the flotation process. Dokl. AN SSSR 146 no.3: 628-630 S '62. (MIRA 15:10)

1. Predstavleno akademikom S.I.Vol'fkovichem.
(Flotation) (Dielectrics)

ARUTYUNYAN, B.Sh.; BORISOV, V.M.; ZHEPLINSKIY, B.M.; MESROPYAN, N.N.; MESHCHERYAKOV, N.F.; UL'YANOV, N.S.

Apparatus for the destruction of flotation froth. Khim. prom. no.2:146-147 F '63. (MIRA 16:7)

(Flotation)

S/040/63/027/001/025/027
D251/D308

AUTHORS: Borisov, V.M. and Shmyglevskiy, Yu.D. (Moscow)

TITLE: On the set-up of variation problems of gas dynamics

PERIODICAL: Prikladnaya matematika i mekhanika, v. 27, no. 1, 1963, 183-185

TEXT: The author considers a two-dimensional iso-energetic and isentropic flow expressed as a contour integral. The set-up of variation problems for such a flow are given. Two methods of dealing with the problem of maximum nozzle thrust and one general variation problem are given. There is 1 figure.

SUBMITTED: October 10, 1962

Card 1/1

ACCESSION NR: AP3004965 S/0208/63/003/004/0788/0793

AUTHOR: Borisov, V. M. (Moscow)

TITLE: On the optimum body shape in supersonic gas flow

SOURCE: Zhurnal vy*chisl. matematiki i matematich. fiziki, v. 3, no. 4, 1963, 788-793

TOPIC TAGS: gas dynamics, extremum problem, supersonic gas flow, shock wave, drag, variational problem, real gas effect

ABSTRACT: Two variational problems in gas dynamics have been considered. The first is an extremum problem in a perfect supersonic gas flow where the wave impedance over a body of revolution is minimized. The first family characteristics Aa is given along with the shock wave at "a" and its inclination σ_a (see Fig. 1 on the Enclosure). The axisymmetric gas dynamic equations are written for a perfect gas to determine the shape of AB for minimum drag. These are written as a set of six conditions, including the functional χ defining drag, the functional X as a function of α, β, σ and r, three boundary conditions and two initial conditions. It is shown that a solution exists in the case of a boundary extremum determined by the bounds of admissible function domains. The variational problem is subsequently

Card 1/2

ACCESSION NR: AP3004965

extended to include real gas effects in equilibrium, isentropic flow. A numerical example is given corresponding to flow with M = 2, p = 4.5 atm, T = 2048K. "The author is grateful to Yu. D. Shmy*glevskiy and A. N. Krayko." Orig. art. has 19 equations and 6 figures.

ASSOCIATION: none

SUBMITTED: 29Oct62 DATE ACQ: 30Aug63 ENCL: 01

SUB CODE: AI NO REF SOV: 006 OTHER: 002

Card 2/2

BORISOV, V.M.; SHMYGLEVSKIY, Yu.D. (Moskva)

Setting variational problems of gas dynamics. Prikl. mat. i mekh. 27 no.1:183-185 Ja-F '63. (MIRA 16:11)

BORISOV, V.M.; GOLGER, Yu.Ya.; RATOBYL'SKAIA, L.D.

Relation between the ζ-potential and the surface charge with its flotation properties. Khim. prom. no.10:762-765 O '63.
(MIRA 17:6)

BORISOV, V.M. (Moskva); SHIPILIN, A.V. (Moskva)

Nozzles for maximum thrust with arbitrary isoperimetric conditions. Prikl. mat. i mekh. 28 no.1:182-183 Ja-F'64. (MIRA 17:2)

BORISOV, V. M.; VOL'FKOVICH, S. I.; LENSKIY, A. S.; TERNOVSKAYA, A. N.; BERNATSKIY, Yu. P.

In memory of Arkadii Mikhailovich Malets, d. 1963. Khim prom no. 3:233 Mr '64. (MIRA 17:5)

ANGELOV, A.I.; BORISOV, V.M.

Electrostatic concentration of phosphorite ores. Khim. prom. no. 4:251-258 Ap '64. (MIRA 17:7)

BORISOV, V.M.; GRIGORYANTS, Yu.M.

Specialized repair of measuring equipment in the Lower Volga Economic Region. Izm. tekh. no.12:48-51 D '64.

(MIR' 18:4)

LEPESHKOV, I.N.; BORISOV, V.M.; SHAPOZHNIKOVA, A.N.; ZAYTSEVA, I.S.

Separation of natural polyhalite salt in hydrocyclones. Khim. prom. no.6:437-439 Je '64. (MIRA 18:7)

BORISOV, V.M.; DANILINA, Ye.A.

Results of the analysis of the work of the track repair machinery stations. Put' i put.khoz. 9 no.8:7-9 '65.

(MIRA 18:8)

1. Nachal'nik Putevoy mashinnoy stantsii No.52, stantsiya Otreshkovo, Moskovskoy dorogi (for Borisov). 2. Starshiy inzh. Putevoy mashinnoy stantsii No.52, stantsiya Otreshkovo, Moskovskoy dorogi (for Danilina).

Ps-4/Pw-4 WW

ACCESSION NR: AP5006259 S/0040/65/029/001/0106/0113

AUTHOR: Borisov, V. M. (Moscow)

44
B

TITLE: Variational problem of three-dimensional hypersonic flow

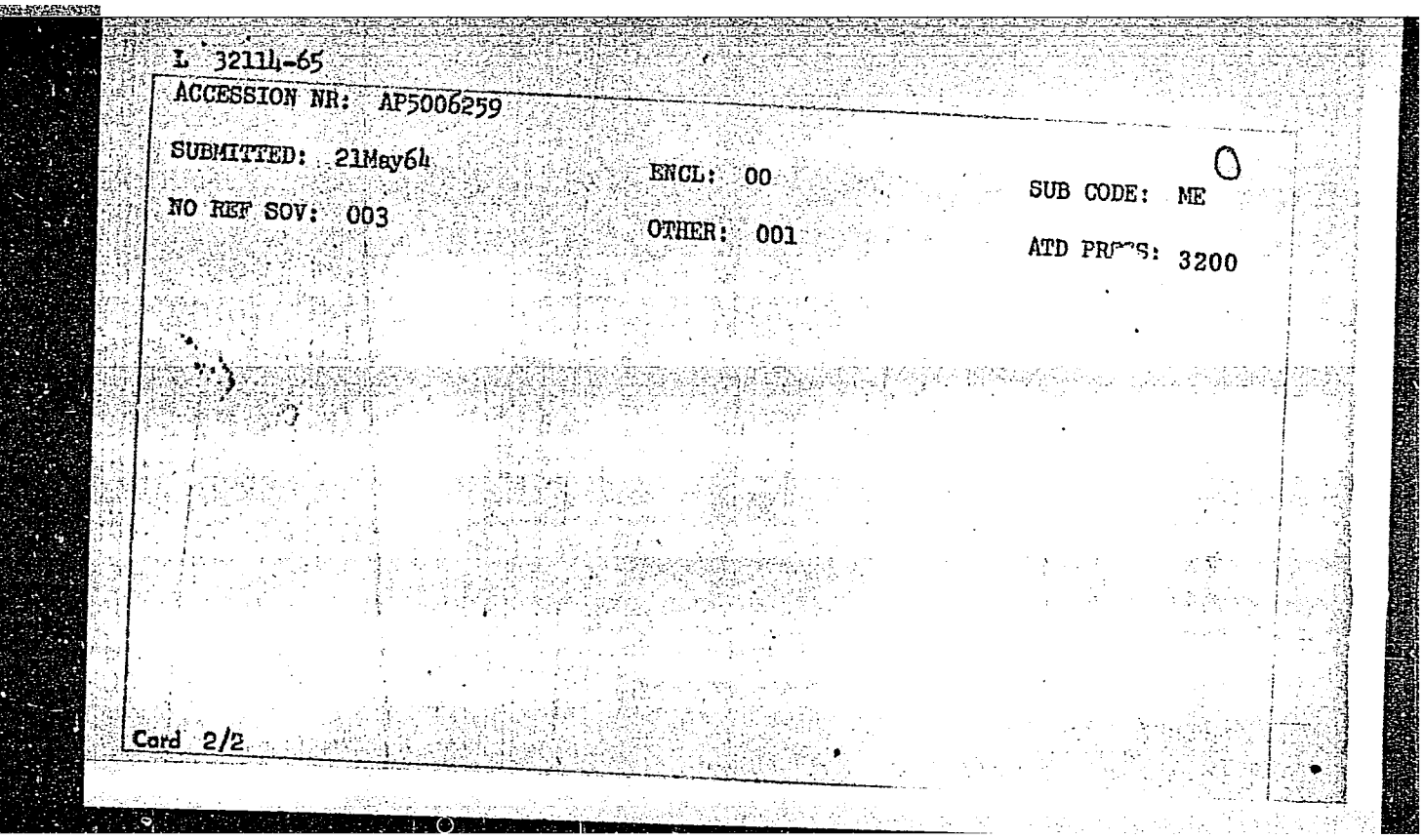
SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 1, 1965, 106-113

TOPIC TAGS: nozzle, hypersonic flow, nozzle optimization, nozzle design

ABSTRACT: The design of the diverging section of a hypersonic nozzle with maximum thrust is analyzed. The first exact solution of this problem was obtained by Shmiglevskiy in one-dimensional form. In the present study, the functionals were correlated by the differential flow equations, and the extremum conditions were determined as a boundary problem for a system of nonlinear partial differential equations, with boundary conditions extending over the entire surface confining the flow core. In the case when the restraints are related only to the initial contour of the nozzle, a group of optimum spatial solutions is obtained for which the number of independent variables in the boundary problem can be reduced. Orig. art. has: 2 figures and 33 formulas. [PV]

ASSOCIATION: none

Card 1/2



L 32114-65

ACCESSION NR: AP5006259

SUBMITTED: 21May64 ENCL: 00 SUB CODE: ME

NO REF SOV: 003 OTHER: 001 ATD PRESS: 3200

Card 2/2

BORISOV, V.M. (Moskva)

System of bodies with a minimal wave resistance. Inzh. zhur. 5 no.6:1028-1034 '65. (MIRA 19:1)

1. Submitted August 14, 1965.

BORISOV, V.M.; LENSKIY, A.S.

Basic means for the development and tasks of the mineral fertilizer industry. Khim.prom. no.1:13-16 Ja '64. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut po udobreniyam i insekto-fungitsidam im. Ya.V.Samoylova.

ACCESSION NR: AP4013393 S/0040/64/028/001/0182/0183

AUTHORS: Borisov, V. M. (Moscow); Shipilin, A. V. (Moscow)

TITLE: Maximal thrust nozzles with arbitrary isoperimetric conditions

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 1, 1964, 182-183

TOPIC TAGS: jet, nozzle, maximal thrust, isoperimetric condition, numerical solution, boundary value problem, nonlinear partial differential equation, lateral surface, Lagrange multiplier

ABSTRACT: K. G. Guderley and J. V. Armitage (A General Method for the Determination of Best Supersonic Rocket Nozzles. Paper Presented at the Symposium on Extremal Problems in Aerodynamics, Boeing Scientific Research Laboratories Flight Sciences Laboratory, Seattle, Washington, December 3-4, 1962) obtained necessary conditions for an extremum in the problem of nozzles with greatest thrust under arbitrary conditions on the nozzle wall. Numerical solution of this problem is tied up with a very complex boundary value problem for nonlinear partial differential equations. The present authors find one class of solutions for this boundary value problem. Orig. art. has: 10 formulas and 1 diagram.

Card 1/2

ACCESSION NR: AP4013393

ASSOCIATION: none

SUBMITTED: 24Oct63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: AI NO REF SOV: 001 OTHER: 001

Card 2/2

BORISOV, V. N.; ALEKSANDROV, D. S.; MEZHUYEVA, V. V.

Study of the arc quenching properties of freon and electron gas. Elektroenergetika no.6:129-136 '62. (MIRA 16:4)

(Freon—Electric properties)
(Electron gas—Electric properties)
(Electric switchgear)

BORISOV, V. N.; ALEKSANDROV, D. S.; MEZHUYEVA, V. V.

Study of the quenching of an electric arc in an electron gas.
Elektroenergetika no.6:137-152 '62. (MIRA 16:4)

(Electron gas—Electric properties)
(Electric switchgear)
(Electric arc)

BORISOV, V.N. (Moskva), MOTSKUS, I.B. (Moskva)

Problems of the experimental and theoretical determination of the recovery of the dielectric strength of an air gap in an air breaker. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.6:28-34 N-D '60. (MIRA 13:12)

(Electric circuit breakers)

MOVNIN, Mikhail Savel'yevich, doktor tekhn. nauk, prof.; MITINSKIY, Arsenii Nikolayevich, prof.[deceased]; prinyal uchastiye: GOL'TSIKER, D.G., inzh.; BORISOV, V.N., dotsent, kand. tekhn. nauk, retsenzent; SAMUYLLO, V.O., V.O.dots.,, retsenzent; TAUBER, B.A., prof., retsenzent; CHERNAVSKIY, S.A., dotsent, retsenzent; ITSKOVICH, G.M., inzh., nauchnyy red.; PITERMAN, Ye.L., red. izd-va; PARAKHINA, N.L., tekhn. red.

[Technical mechanics; strength of materials, theory of mechanisms and machines. Machine parts] Tekhnicheskaia mekhanika; soprotivlenie materialov, teoriia mekhanizmov i mashin. Detali mashin. Izd.2., perer. Moskva, Goslesbumizdat, 1961. 781 p. (MIRA 14:6)
(Mechanical engineering) (Strength of materials)

SEKOLNIKOV, I. S.; KOMELKOV, V. A.; BOGOMOLOV, A. F.; LIKHACHEV, F. A.; BORISOV, V. N.; LOPSHITS, L. M.

BORISOV, V. N.

Borisov V. N.

Grozozashita Promyshlennykh Sooruzhenii i Zdanii (Lightning Protection of Industrial Structures and Buildings), 202 p., Publ. House of the AS USSR, Moscow, 1951.

BORISOV, V.N.

To the remarks of D.P. Lavrov on "Lightning protection for industrial installations and buildings." Elektrichestvo no. 3, 1952
Inzh

BORISOV, V. N.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Stekol'nikov, I. S. Komel'kov, V. S. Bogomolov, A. F. Likhachev, F. A. Borisov, V. N. Lopshin, L, N.	"Lighting Protection of Industrial Structures and Buildings"	Power Engineering Institute imeni G. M. Krzhizhanovskiy, Academy of Sciences USSR

SO: W-30604, 7 July 1954

BORISOV, V.N. --

"The Protection of Linear-Compensating Condensers from a Voltage Surge by Means of an Arrester With and Air Blast." Cand Tech Sci, Power Engine ring Inst imeni G. M. Krzhizhanovskiy, Acad Sci USSR, 21 Oct 54 (VM, 11 Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

Borisov, V. N.

USSR/ Electricity - Electrical equipment

Card 1/1 Pub. 124 - 7/39

Authors : Borisov, V. N., Cand. Tech. Sc.

Title : Protection of capacitors used for long-distance compensation

Periodical : Vest. AN SSSR 25/5, 44 - 45, May 1955

Abstract : An account is given of experimentation for the development and testing of devices designed to protect batteries of capacitors which are connected across the lines in long-distance transmission of AC current. The devices effect the instantaneous cutout of the capacitors in the case of a short circuit and switch them back into operation when the danger is passed.

Institution : .....

Submitted : .....

Borisov, V. N.

STEKOL'NIKOV, Il'ya Samuilovich; BORISOV, Vladimir Nikolayevich; SMIRNOV, Il'ya Grigor'yevich; OTOCHEVA, M.A., redaktor izdatel'stva; KONYASHINA, A.D., tekhnicheskiy redaktor.

[Lightning Protection of buildings and equipment in agricultural localities] Grozozashchita zdanii i sooruzhenii v sel'skoi mestnosti. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1956. 86 p.

(MIRA 10:4)

(Lightning protection)

Borisov, V.N.

AUTHOR: ARONZON,N.Z., BORISOV,V.N. PA - 2166

TITLE: Electric Disruptive Strength of Air in an Air Switch. (Elektricheskaya prochnost' vozdukha v vozdushnom vyklyuchatele. Russian).

PERIODICAL: Izvestiia Akad.Nauk SSSR, Otdel Tekhn. 1957, Vol , Nr 1, pp 149-152 (U.S.S.R.)

Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: The level and the character of the modification according to time of the electric disruptive strength of compressed air moving in an air switch is investigated in order to ascertain possible reasons for faulty ignition. The objects used in connection with this investigation were: the experimental chamber with a number of exchangeable electrodes of various shapes and the interspaces of a switch of Russian manufacture. The device used was worked out in 1953 at the Institute for Energy of the Academy of Science of the U.S.S.R. For purposes of investigation comparison of the modification of the character of the electric disruptive strength of the interelectrode space according to time served as a basis, viz. usually in the case of a constant length (30 mm) of this space, different shapes of electrodes, stopping down of the input apertures of the electrodes with diaphragms of different diameters, in the case of a complete stoppage of the egress of air by one of the electrodes, and in the case of an intended

Card 1/2

Electric Disruptive Strength of Air in an Air Switch.

formation of vortices in the chamber by the removal of equalizing partition walls. It was found that, with certain conditions governing the egress of compressed air which is determined by the configuration of the electrodes, the electric disruptive strength of the operation sphere of the air switch is considerably lower than in the case of immobile air with the same pressure. The decrease of disruptive strength below the level of the acting voltage is the basic cause of the occurrence of repeated ignition during the currentless interval. This disadvantage can be eliminated by means of a slight stopping down of the output apertures of the electrodes or by the application of a system with unilateral blowing. (8 illustrations).

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: 13.6.1956
AVAILABLE: Library of Congress

SOV/24-58-4-30/39

AUTHORS: Aronzon, N. Z., Borisov, V. N. and Obolduyev, S.G. (Moscow)

TITLE: Circuit for Generating Unipolar Current Pulses (Skhema dlya generatsii unipolyarnykh impul'sov toka)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 144-145 (USSR)

ABSTRACT: Equipment is being extensively used which requires powerful current and voltage pulses of very short durations. In such generators a capacitance is usually discharged across a load by means of a controlled gas discharge device. This capacitance and the inductance of the load form an oscillating circuit and the task of the switching device is to allow the passage of the first half-wave of the current of the oscillating discharge. If the amplitude of current pulses exceeds several thousand ampères and their duration is below a few μsec, existing gas discharge devices, although having a high throughput capacity as regards the current, will be unsuitable due to back-firings. To eliminate this drawback, a method has been described by Chuchalin and Razin (Ref 1)

Cardl/4

Circuit for Generating Unipolar Current Pulses

consisting of connecting an additional gas discharge device in parallel with the storage capacitance which "absorbs" from the capacitance the charge of opposite polarity. However, as was mentioned in the dissertation of one of the authors, N. Z. Aronzon, "Striking and its improvement in an arc valve", such a method proved impracticable in the case of such high current intensities due to the difficulties of striking the "absorbing" ignitron. Therefore, the simpler method of eliminating back-firings is of interest which consists in connecting a resistance into the discharge circuit so that this circuit becomes a damped one. An obvious disadvantage of this method is that for obtaining an equal amplitude of the current intensity the voltage has to be 2.5 times as high as in circuits without such a damping resistance. However, this disadvantage can to some extent be eliminated by using as a damping element a resistance in parallel with a capacitance. If the values of the resistance R_2 and the capacitance C_2 (Fig 1) are

Circuit for Generating Unipolar Current Pulses

suitably chosen, unipolar impulses can be generated by means of such a circuit, the amplitudes of which are considerably higher than in circuits with only a resistance as a damping element. In the above mentioned dissertation a calculation is given for a selected ratio of the parameters. In this paper the author calculates the optimum ratio of the parameters for a circuit arrangement as shown in Fig 1, wherein L and R_1 are respectively the inductance and the resistance of the load, C_1 is the storage capacitance. In view of the difficulties of analytical investigation of the problem, the authors applied the oscillographic investigation on models. It can be seen from the results graphed in Fig 3 that the maximum attainable amplitude of unipolar current impulses by means of a circuit as shown in Fig 1 is 0.59 to 0.55, i.e. about 50 to 60% higher than the relative amplitude of an ordinary aperiodically damped discharge. In Fig 4 characteristic oscillograms of unipolar pulses are graphed for various ratios of the circuit parameters;

Circuit for Generating Unipolar Current Pulses

in this figure curve 3 corresponds to the maximum attainable amplitude.
There are 4 figures and 1 Soviet reference.

SUBMITTED: November 15, 1957

BORISOV, V.N.

Meeting on requirements for high-voltage cutouts. Elektrichestvo no. 11:93 N '60. (MIRA 13:12)

(Electric coutouts)

BORISOV, V.N.

New principle for designing an internal overvoltage limiting discharger. Elektroenergetika no.5:55-66 '62. (MIRA 15:4)
(Electric power distribution--High tension) (Electric protection)

S/196/62/000/002/022/023
E194/E155

AUTHORS: Borisov, V.N., and Obukh, A.A.

TITLE: An arrester to limit the internal overvoltages, with arc-suppression in air and linear resistors

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.2, 1962, 23, abstract 2I 156. (Elektr. stantsii, no.5, 1961, 65-71).

TEXT: The Energeticheskiy Institut (Power Engineering Institute) of AS USSR has developed an arrester with forced extinction of the follow-up current arc by air blast at an excess pressure of 0.2-0.3 atm. By controlling the air-blast pressure, the ratio between extinction and breakdown voltages may be made near to unity or even more. The working resistances are metallic so that energy can be dissipated for almost any duration of overvoltage. Such an arrester with 'soft' arc suppression can reliably suppress currents of 2 - 3 kA and makes it possible to maintain the breakdown voltage at a single level with both atmospheric pressure and with blast. This principle was used to

Card 1/2

An arrester to limit the internal... S/196/62/000/002/022/023
E194/E155

make an arrester for 110 kV consisting of three spark gaps in series with metal current-limiting resistance. The voltage is distributed between the gaps by a capacitative divider. Two of the gaps are used for arc suppression, and air under pressure is supplied to them; the third gap is not arc-suppressing and serves to reduce the electric strength of the first two at the instant of application of air blast to them. An electromagnet acting on the valve system which supplies compressed air to the arc-suppression gaps is connected to a saturating current transformer and operates only after breakdown of the spark gaps. Tests on a model of the arrester showed that this principle can be extended to high-voltage arresters. By altering the gaps without arc suppression and by altering the excess pressure in the arc-suppression gaps, the ratio between the suppression and breakdown voltages can be varied over a wide range. The current value has no important influence on the suppression characteristics of the arrester. The working resistance can be made of steel tape.

[Abstractor's note: Complete translation.]

Card 2/2

L 63600-65 EWT(d)/T IJP(c)

ACCESSION NR: AP5016969 UR/0280/65/000/003/0071/0075

AUTHOR: Borisov, V. N. (Moscow); Fedoseyev, V. A. (Moscow) 23 B

TITLE: Criterion for the feasibility of logical function realization by means of a threshold element 16

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 3, 1965, 71-75

TOPIC TAGS: logical function realization, threshold element, realization feasibility, code distance, Muroga function

ABSTRACT: A criterion is proposed for determining the feasibility of realization, by means of a single threshold element, of a logical function specified in the form of a true table of values. The criterion does not require cumbersome calculations and is in the form of a theorem specifying the necessary and sufficient conditions. It utilizes the concept of code distance and the minimum sub-code and assumes the carrying out of not more than $m(m-1)/2$ checks with code combinations of binary variables (m is the number of unit and zero values of the logical function in question). Illustrative examples deal with a function of four variables, the Muroga function (Proc. Internat. Conf. and Information Processing, Unesco, Paris, 1959), and the Varshavskiy problem (Voprosy

Card 1/2

L 63600-65

ACCESSION NR: AP5016969

teorii matematicheskikh mashin, 1962, no. 2), invented to disprove Muroga's criterion. Orig. art. has: 1 formula, 1 figure, and 3 tables.

ASSOCIATION: none

SUBMITTED: 27Jun64 ENCL: 00 SUB CODE: MA, DP

NO REF SOV: 001 OTHER: 001

Card 2/2

BORISOV, V.N.; BONDAREVA, S.T.

Toxinfection on fur farms in the Taymyr. Veterinariia 41 no.4:43-44 Ap '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva Kraynego Severa.